

# Model 2292 & 2294 Leased-Line Extenders over IP

## Quick Start Guide



**Important**—This is a Class A device and is intended for use in a light industrial environment. It is not intended nor approved for use in an industrial or residential environment.



WARNING

- This device contains no user serviceable parts. The equipment shall be returned to Patton Electronics for repairs, or repaired by qualified service personnel.
- **Mains Voltage:** Do not open the case when the power cord is connected. For systems without a power switch, line voltages are present within the power supply when the power cord is connected.
- The external power adapter shall be a listed Limited Power Source. Ensure that the power cable used meets all applicable standards for the country in which it is to be installed, and that it is connected to a wall outlet which has earth ground. The mains outlet that is utilized to power the device shall be within 10 feet (3 meters) of the device, shall be easily accessible, and protected by a circuit breaker.
- Hazardous network voltages are present in WAN ports regardless of whether power to the SmartNode is ON or OFF. To avoid electric shock, use caution when near WAN ports. When detaching cables, detach the end away from the SmartNode first.
- Do not work on the system or connect or disconnect cables during periods of lightning activity.
- Before opening the chassis, disconnect the telephone network cables to avoid contact with telephone line voltages.

---

## 1.0 Installing the SmartNode extender

---

### 1.1 Mounting the SmartNode extender

---

Place the extender on a desktop or similar sturdy, flat surface that offers easy access to the cables. The extender should be installed in a dry environment with sufficient space to allow air circulation for cooling.

For proper ventilation, leave at least 2 inches (5 cm) to the left, right, front, and rear of the SmartNode extender.

### 1.2 Connecting cables

---

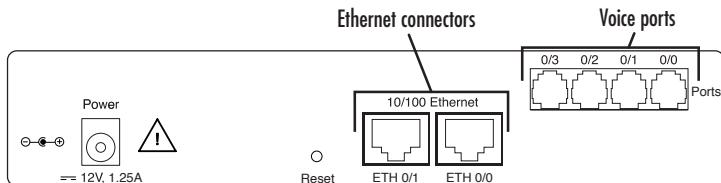


WARNING

- Do not work on the system or connect or disconnect cables during periods of lightning activity.
- The Interconnecting cables shall be acceptable for external use and shall be rated for the proper application with respect to voltage, current, anticipated temperature, flammability, and mechanical serviceability.

Install the cables in the following order:

1. Installing the RJ-11 voice port cable or cables  
(see 1.3 "Installing an interface cable on the extender's voice ports" on page 3)

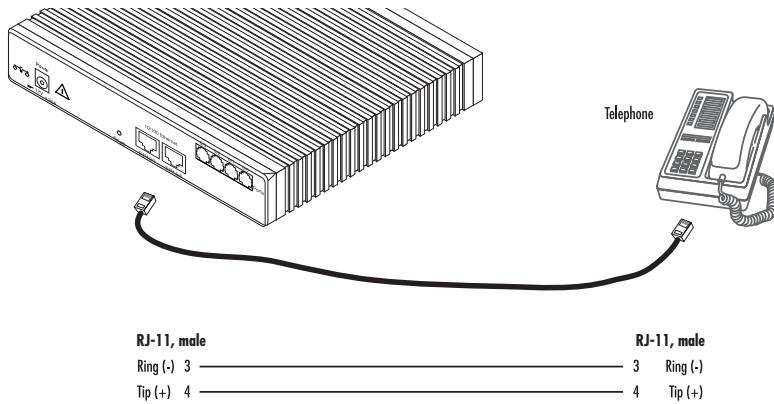


2. Installing the 10/100 Ethernet port cable or cables  
(see 1.4 "Installing the Ethernet cable" on page 5)
3. Installing the power input  
(see 1.5 "Connecting to external power source" on page 6)

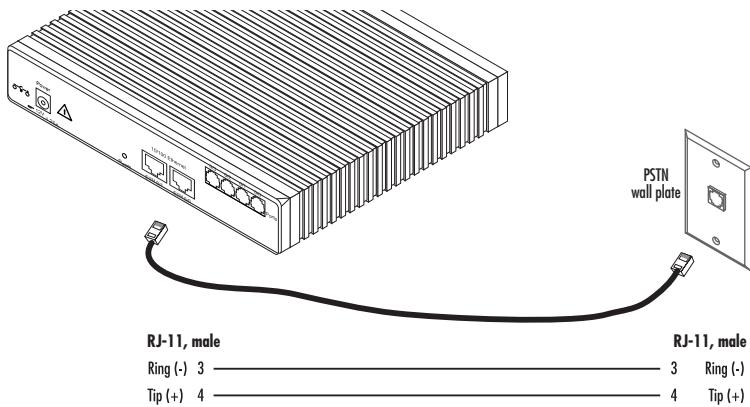
### 1.3 Installing an interface cable on the extender's voice ports

The SmartNode extender comes with at least two voice ports (see figure 1) located on the back of the extender. The voice ports are connected to analog devices via cables (see figure 2 and figure 3) terminated with RJ-11 connectors (see figure 4 and Table 1 on page 4 for pin-out information).

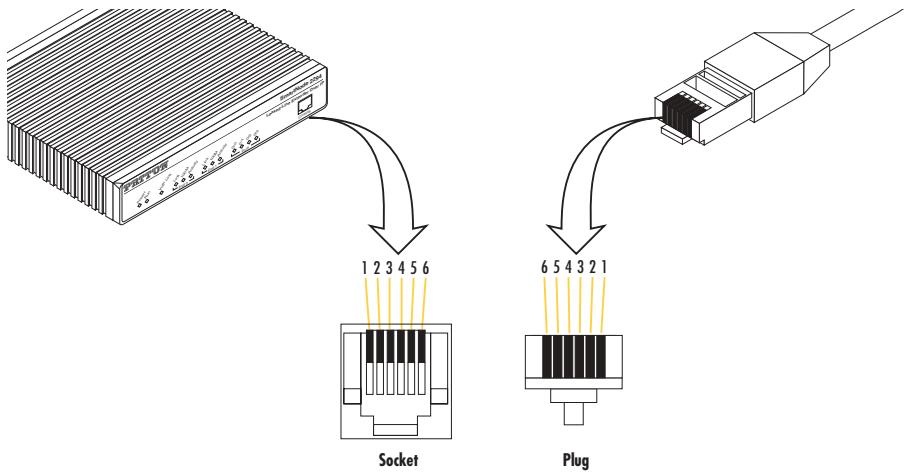
**Figure 1.** Rear view showing location of Ethernet connectors and voice ports (SmartNode 2294 shown)



**Figure 2.** FXS connection



**Figure 3.** FXO connection



**Figure 4.** RJ-11 pinout diagram

**Table 1.** RJ-11 socket

Pin	Signal
3	Ring (-)
4	Tip (+)

**Note** Unit must not connect directly to telecom network voltage (TNV).

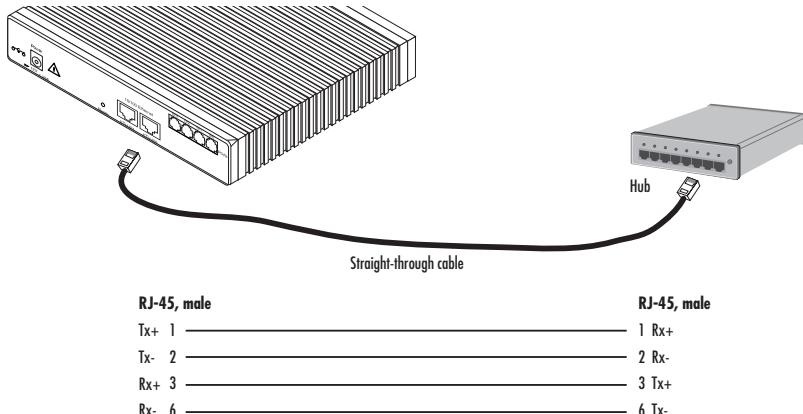
## 1.4 Installing the Ethernet cable

The SmartNode 2292 Series has automatic MDX (auto-cross-over) detection and configuration on the Ethernet ports. Any of the two ports can be connected to a host or hub/switch with a straight-through wired cable (see figure 5). Ethernet devices (10Base-T or 100Base-T) are connected to the SmartNode's Ethernet ports (see table 2 for port pin-out listing) via a cable terminated with RJ-45 plugs. Because the SmartNode 2294 Series does not have the MDX feature, a cross-over cable is required when connecting SmartNode 2294 Series devices to a host (see figure 6).

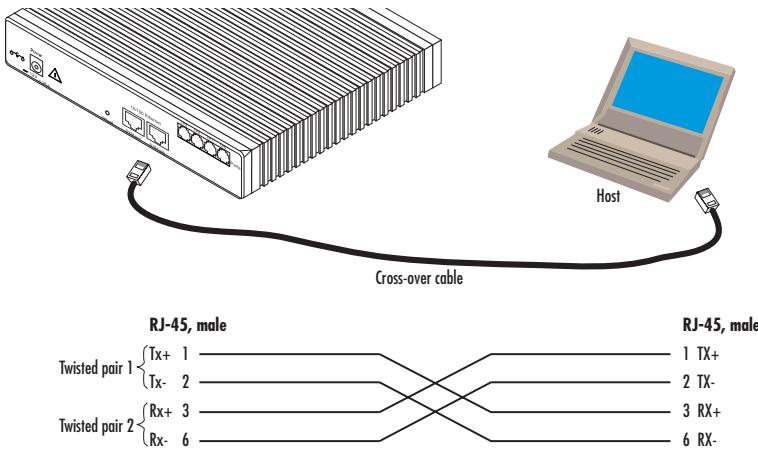
**Table 2.** Ethernet 10/100Base-T (RJ-45) port pin-outs (SmartNode 2294 Series)

Pin	Signal
1	TX+
2	TX-
3	RX+
6	RX-

**Note** Pins not listed are not used.



**Figure 5.** Connecting a SmartNode 2294 Series device to a hub



**Figure 6.** Connecting to a host

## 1.5 Connecting to external power source

The extender comes with an external power supply. This section describes installing the power cord into the extender. Do the following:

**Note** Do not connect the power cord to the power outlet at this time.

1. Insert the barrel type connector end of the AC power cord into the external power supply connector.

**CAUTION** !

The extender power supply automatically adjusts to accept an input voltage from 100 to 240 VAC (50/60 Hz).

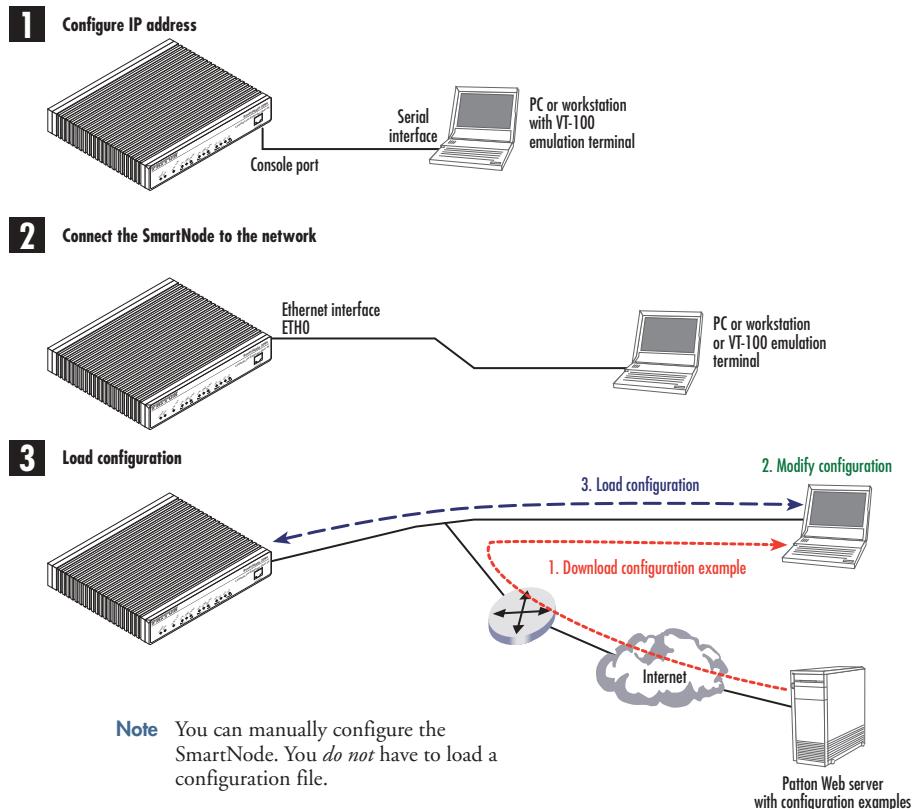
Verify that the proper voltage is present before plugging the power cord into the receptacle. Failure to do so could result in equipment damage.

2. Verify that the AC power cord included with your extender is compatible with local standards. If it is not, contact Patton to find out how to replace it with a compatible power cord.
3. Connect the male end of the power cord to an appropriate power outlet.
4. Verify that the green *Power* LED is lit.

## 2.0 Configuring the SmartNode extender

Patton SmartNodes can be used for a wide variety of IP-based network applications. To support and ease the configuration of the SmartNodes configuration, templates for the most important applications are available on the Patton server at [www.patton.com/voip](http://www.patton.com/voip).

The main steps for setting up a new SmartNode are shown in figure 7.



**Figure 7.** Steps for setting up a new SmartNode

## 2.1 Configure the IP address

### Power connection and default configuration

First the SmartNode must be connected to the mains power supply with the power cable. Wait until the 'Run' LED stops blinking and lights constantly. Now the SmartNode is ready.

The factory default configuration for the Ethernet interface IP addresses and network masks are listed in table 3.

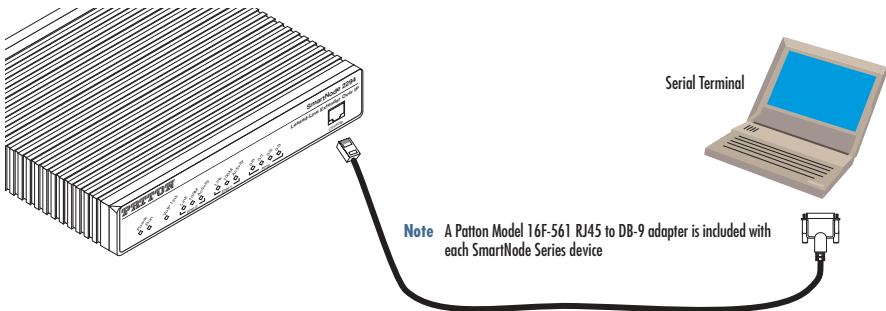
**Table 3.** Factory default IP address and network mask configuration

	IP Address	Network Mask
Interface Ethernet 0 (ETH0)	DHCP	DHCP
Interface Ethernet 1 (ETH1)	192.168.1.1	255.255.255.0

Both Ethernet interfaces are activated upon power-up.

## Connect with the serial interface

The *Console* port is wired as an EIA-561, RS-232 port. Use the included Model 16F-561 adapter and cable (see figure 8) between the SmartNode's *Console* port and a PC or workstation's RS-232 serial interface. Activate the terminal emulation program on the PC or workstation that supports the serial interface (e.g. HyperTerm).



**Figure 8.** Connecting to the terminal

Terminal emulation program settings:

- 9600 baud
- no parity
- 8 bit
- 1 stop bit
- 1 start bit
- No flow control

## 2.2 Login

---

1. Accessing your SmartNode via the local console port (or via a Telnet session) causes the login screen to display. Type the factory default login: *administrator* and leave the password empty. Press the *Enter* key after the password prompt.

```
login:administrator  
password: <Enter>  
172.16.40.1>
```

2. After you have successfully logged in you are in the operator execution mode, indicated by **>** as command line prompt. With the commands *enable* and *configure* you enter the configuration mode.

```
172.16.40.1>enable  
172.16.40.1#configure  
172.16.40.1(cfg)#
```

3. Enter the following commands for the first SmartNode 229x device in the pair:

```
Copy nvram:a-side-config startup-config  
Copy running-config startup-config
```

4. Follow the same procedure for the other SmartNode 229x device in the pair:

```
Copy nvram:b-side-config startup-config  
Copy running-config startup-config
```

**Note** The configuration above is only a sample configuration that you may use as an example. You should specify your own parameters such as your IP address and other related information as required. For detailed information about configuring and operating your SmartNode, set-up procedures, and troubleshooting, refer to the *SmartNode Series SmartWare Software Configuration Guide* on the CD-ROM that came with your unit.

5. Reboot both units and connect them back-to-back through their Ethernet 0/1 ports. Voice connections will automatically be set up between the units.

The steps above will configure the IP addresses as well as the required configurations for voice connections.

---

## **3.0 Additional Information**

---

Refer to the *Model 2292/2294 Getting Started Guide* located on the CD-ROM shipped with your device and available online at [www.patton.com/manuals](http://www.patton.com/manuals). For detailed information about:

- Installing, configuring, operating, and troubleshooting.
- Warranty, trademark & compliance

---

## **A.0 Customer and Technical Support**

---

Toll-Free VoIP support: call [sip:support@patton.com](mailto:sip:support@patton.com) with a VoIP SIP client

Online support: [www.patton.com](http://www.patton.com)

E-mail support: [support@patton.com](mailto:support@patton.com) — answered within 1 business day

Telephone support:

- Standard: +1 (301) 975-1007 (USA), Monday–Friday: 8:00 am to 5:00 pm EST (1300 to 2200 UTC/GMT)
- Alternate: +41 (0)31 985 25 55 (Switzerland), Monday–Friday: 8:00 am to 5:00 pm CET (0900 to 1800 UTC/GMT)

Fax: +1 (253) 663-5693 (USA) or +41 (0)31 985 25 26 (Switzerland)

---

## **B.O Compliance Information**

---

### **B.1 Compliance**

---

EMC Compliance:

- EN55022, Class A
- EN55024

Safety Compliance:

- EN60950

### **B.2 CE Declaration of Conformity**

---

This equipment conforms to the requirements of Council Directive 1999/5/EC on the approximation of the laws of the member states relating to Radio and Telecommunication Terminal Equipment and the mutual recognition of their conformity.

The safety advice in the documentation accompanying this product shall be obeyed. The conformity to the above directive is indicated by **CE** sign on the device.

The signed Declaration of Conformity can be downloaded at [www.patton.com/certifications](http://www.patton.com/certifications).

## Copyright statement

Copyright © 2009, Patton Electronics Company. All rights reserved.

The information in this document is subject to change without notice. Patton Electronics assumes no liability for errors that may appear in this document.

## Trademarks statement

The term *SmartNode* is a trademark of Patton Electronics Company. All other trademarks presented in this document are the property of their respective owners.

## Warranty

For warranty information, refer to the *Model 2292/2294 Getting Started Guide* located on the CD-ROM that came with your device or available online at [www.patton.com](http://www.patton.com).



In accordance with the requirements of council directive 2002/96/EC on Waste of Electrical and Electronic Equipment (WEEE), ensure that at end-of-life you separate this product from other waste and scrap and deliver to the WEEE collection system in your country for recycling.